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Customer Number

Patent
Case No.: 59419US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: SCHERER, RICHARD J.

Application No.: 10/788684

Confirmation No.: 7027

Filed: February 27, 2004

Title: CONNECTOR APPARATUS

BRIEF ON APPEAL

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

This is an appeal from the Office Action mailed on February 28, 2006, in light of the Advisory Action mailed March 27, 2006, finally rejecting claims 1-16.

☐ Please charge the fee provided in 37 CFR § 41.20(b)(2) to Deposit Account No. 13-3723. One copy of this sheet marked duplicate is also enclosed.

☒ Any required fee will be paid at the time of EFS-Web submission.

☒ If necessary, charge any required fee, or credit any overpayment to Deposit Account No. 13-3723.

A Notice of Appeal in this application was mailed on April 27, 2006, and was received in the USPTO on April 27, 2006.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 1-16 are pending. Claims 17-51 are withdrawn. Claims 1-16 stand rejected.

STATUS OF AMENDMENTS

Amendments were filed after the final rejection and have been entered into the record by the Examiner.

SUMMARY OF CLAIMED SUBJECT MATTER

The claims at issue concern an electrical header connector (100) comprising:

- a header body (102) having an internal surface (122) and an external surface (124), the header body (102) including a plurality of first openings (116) and a plurality of second openings (118) extending from the internal surface (122) to the external surface (124); and
- a plurality of shield blades (106) configured for insertion into the plurality of second openings (118), each of the plurality of shield blades (106) having at a first end thereof (162) a generally right angle shielding portion (128) configured to be disposed adjacent to a corresponding one of the plurality of signal pins (104), wherein the first ends (162) of the plurality of shield blades (106) are substantially coplanar with the internal surface (122) of the header. Aspects of shield blades (106) are described in the specification, e.g., at p. 5, lines 3-20 and col. 8, lines 14-29.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL**First Ground of Rejection**

Claims 1-16 stand rejected as being directed to a non-elected invention.

Second Ground of Rejection

Claims 1-16 stand rejected under 35 USC § 103(a) as purportedly unpatentable over Ramey et al. (USPN 6,146,202).

ARGUMENT**First Ground of Rejection**

Claims 1-16 stand rejected as being directed to a non-elected invention.

Applicants have amended claim 1 to overcome this rejection and submit that the rejection of claims 1-16 has been overcome.

Second Ground of Rejection

The Office Action states in part:

As per claim 1, Ramey discloses in figs. 1 and 15 an electrical header connector 400 comprising: a header body 402 having an internal surface 422 and an external surface 424, the header body including a plurality of first openings 416 and a plurality of second openings 418 extending from the internal surface to the external surface; and a plurality of shield blades 406 configured for insertion into the plurality of second openings 418, each of the plurality of shield blades having at a first end 462 thereof a generally right angle shielding portion 428 configured to be disposed adjacent to a corresponding one of the pluralities of signal pins 404. Ramey does not explicitly disclose that the first ends 462 of the plurality of shield blades 406 are substantially coplanar with the internal surface 422 of the header body. Ramey does disclose in fig. 15 that the first ends 462 extend from the external surface 424 through throat portions 440, 442 to the internal surface 422. It is unclear how far the first ends 462 extend from the surface 422; however, it is clear to one skilled artisan that a distance extended out from the surface (planar) 422 is related and thus one would consider the first ends 462 and the surface 422 are substantially coplanar. In any event, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to make the first ends 462 extending not too far from the surface 422 and extending far enough to make electrical connection, so that the first ends 462 could consider substantially coplanar with the surface 422. This is because to compact the header connector and to make such header connector a relatively smaller in size.

As per claims 2-6, Ramey discloses a plurality of signal pins 404 configured for insertion into the plurality of first openings 416 to form an array of pin contacts 426 extending from the internal surface 422 of the header body; wherein the first and second openings 416, 418 are arranged in the header body such that the generally right angle shielding portions 428 of the plurality of shield blades 406 substantially surround the plurality of signal pins 404 to form a coaxial shield around each of the plurality of signal pins; wherein the plurality of signal pins and the plurality of shield blades are retained in the header body by press-fit; wherein the generally right angle shielding portion of each of the plurality of shield blades includes first and second leg

portions 430,432 and wherein each of the plurality of second openings 418 in the header body has a generally right angle shape for receiving the generally tight angle shielding portion 428 of a shield blade (figs. 15, 15a, 16, and col. 12, line 45 to col. 13, line 45).

As per claim 7, Ramey discloses that each of the plurality of generally right angle second openings 418 includes first and second narrowed throat portions 440,442 dimensioned to engage the first and second leg portions 430,432 of the generally right angle shielding portion 428 of a shield blade to hold the shield blade in place (fig. 16, col. 13, lines 19-33).

As per claims 8-9, Ramey discloses that each of the plurality of generally right angle second openings 418 in the header body includes a central portion 434 coupled to the first and second end portions 436,438 by the first and second narrowed throat portions 440,442; the central portion and the first and second end portions of each of the plurality of generally right angle second openings are shaped to provide an air gap 444 surrounding the generally right angle shielding portion of a shield blade (fig. 16, col. 13, lines 19-37).

As per claims 10-12, Ramey discloses that each of the plurality of shield blades 406 has a second end 464 thereof extending beyond the external surface of the header body, the second end configured for engagement with a printed circuit board 34; wherein the plurality of shield blades 406 are formed in a continuous strip of material; wherein the continuous strip of material forming the plurality of shield blades further comprises at least one tail 448 configured for engagement with a printed circuit board 34. (figs. 15, 15a, 16, and col. 12, line 45 to col. 13, line 65).

As per claim 13, Ramey discloses the invention substantially as claimed except for one tail for every two shield blades. It would have been obvious to one of ordinary skill in the art to have one tail for every two shield blades in order to save material.

As per claims 14-16, Ramey discloses that the continuous strip of the shield blades comprises a plurality of tails spaced along the continuous strip of material forming the plurality of shield blades; wherein the plurality of tails are electrically connected to a common ground (ground trace in pcb 34); wherein at least a portion of the plurality of shield blades are formed in a continuous strip of material (figs. 15, 15a, 16, and col. 12, line 45 to col. 13, line 65).

Applicants submit that according to MPEP 2142, to establish a case of *prima facie* obviousness, three basic criteria must be met: 1) there must be some suggestion or motivation, either in the references or generally known to one skilled in the art, to modify or combine reference teachings, 2) there must be reasonable expectation of success, and 3) prior art references must teach or suggest all the claim limitations. The ability to modify the method of the references is not sufficient. The reference(s) must provide a motivation or reason for making the changes. *Ex parte Chicago Rawhide Manufacturing Co.*, 226 USPQ 438 (PTO Bd. App. 1984).

Applicants respectfully submit that Ramey cannot support a case of *prima facie* obviousness as to the claims because, among other possible reasons, Ramey does not provide a motivation or suggestion for shield blades that are coplanar with the internal surface of the header body. As explained in Ramey at col. 13, lines 6 to 18 and as shown in Fig. 15 of Ramey, first ends 462 of shield blades 406 are elongated. As further explained in Ramey at col. 15, lines

61 to 64, as the socket connector 100 is inserted into the header connector 400, the shield blades 406 of the header connector 400 contact corresponding shield fingers 274 of the socket connector 100. The Office Action states:

“[I]t would have been obvious to one of ordinary skill in the art, at the time the invention was made, to make the first ends 462 extending not too far from the surface 422 and extending far enough to make electrical connection, so that the first ends 462 could consider substantially coplanar with the surface 422.”

In the Ramey header body, shield blades that are coplanar with the internal surface of the header body would, at most, touch housing 120, which is made from insulating material. *See* Ramey at col. 7, lines, 57-61 and see Fig. 22. Therefore, no electrical connection would be established and there would be no motivation to provide shield blades that are coplanar with the internal surface of the header body. In addition, Ramey does not disclose all the elements of the present invention because it does not disclose shield blades of a header connector wherein the first ends of the shield blades are substantially coplanar with the internal surface of the header.

The Advisory Action having a mailing date of March 27, 2006 states:

“applicant’s argument asserting that it would not be obvious to make the contact shorter is seen to be based upon the requirement to make a particular connection to a complementary connector. However, applicant’s claims are not directed to the complementary connector. With the exception of the size, the reference shows the same structure and it would be obvious to change both the size of the reference as well as the complementary connector. Applicant’s argument that there is no motivation, is not correct. In the previous rejection it is the examiner’s opinion that one skilled in the art would be motivated to change the size in order to compact the header connector and to make such header connector a relatively smaller in size.” (emphasis added)

Applicant’s would like to point out that the previous rejection additionally states that:

“In any event, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to make the first ends 462 extending not too far from the surface 422 and extending far enough to make electrical connection.” (emphasis added)

In the foregoing statements, the Examiner has relied on the relationship of the header connector to a complementary connector. Therefore, it is inappropriate to for the Examiner to state that the analysis of Applicants header cannot be viewed in the same light. Furthermore, the Examiner has stated that if the header connector of Ramey is changed, then the complementary connector would be changed as well. As noted by the Examiner, the complementary connector is outside the scope of the present invention.

Applicants further note that according to the Examiner, it would be obvious to extend the shield blades far enough to make electrical connection. As can be seen in Fig. 5, and as is explained at p. 8, lines 16-17, the shield blades of the header connector are too short to make electrical contact with the shielding elements of the socket connector and therefore do not make electrical connection. Accordingly, Applicants again assert that it would not be obvious to alter the shield blades of the Ramey header connector to make them substantially coplanar with the internal surface of the header body.

For these reasons, Applicant(s) submit that the cited references will not support a 103(a) rejection of the claims invention and request that the rejection be withdrawn.

In addition to the foregoing, Applicant(s) submit that a dependent claim should be considered allowable when its parent claim is allowed. *In re McCairn*, 1012 USPQ 411 (CCPA 1954). Accordingly, Applicants submit that all claims depending from claim 1 should also be allowed.

CONCLUSION

For the foregoing reasons, appellants respectfully submit that the Examiner has erred in rejecting this application. Please reverse the Examiner on all counts.

Respectfully submitted,

July 27, 2006
Date

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CLAIMS APPENDIX

1. (Previously Presented) An electrical header connector comprising:
a header body having an internal surface and an external surface, the header body including a plurality of first openings and a plurality of second openings extending from the internal surface to the external surface; and
a plurality of shield blades configured for insertion into the plurality of second openings, each of the plurality of shield blades having at a first end thereof a generally right angle shielding portion configured to be disposed adjacent to a corresponding one of the plurality of signal pins, wherein the first ends of the plurality of shield blades are substantially coplanar with the internal surface of the header.
2. (Previously Presented) The header connector of claim 1, further comprising:
a plurality of signal pins configured for insertion into the plurality of first openings to form an array of pin contacts extending from the internal surface of the header body.
3. (Original) The header connector of claim 2, wherein the first and second openings are arranged in the header body such that the generally right angle shielding portions of the plurality of shield blades substantially surround the plurality of signal pins to form a coaxial shield around each of the plurality of signal pins.
4. (Original) The header connector of claim 2, wherein the plurality of signal pins and the plurality of shield blades are retained in the header body by press-fit.
5. (Original) The header connector of claim 1, wherein the first and second openings are arranged in the header body such that the generally right angle shielding portions of the plurality of shield blades substantially surround the plurality of first openings to form a coaxial shield around each of the plurality of signal pins.
6. (Original) The header connector of claim 1, wherein the generally right angle shielding portion of each of the plurality of shield blades includes first and second leg portions, and wherein each of the plurality of second openings in the header body has a generally right angle shape for receiving the generally right angle shielding portion of a shield blade.

7. (Original) The header connector of claim 6, wherein each of the plurality of generally right angle second openings includes first and second narrowed throat portions dimensioned to engage the first and second leg portions of the generally right angle shielding portion of a shield blade to hold the shield blade in place.
8. (Original) The header connector of claim 7, wherein each of the plurality of generally right angle second openings in the header body includes a central portion coupled to the first and second end portions by the first and second narrowed throat portions.
9. (Original) The header connector of claim 8, wherein the central portion and the first and second end portions of each of the plurality of generally right angle second openings are shaped to provide an air gap surrounding the generally right angle shielding portion of a shield blade.
10. (Original) The header connector of claim 1, wherein each of the plurality of shield blades has a second end thereof extending beyond the external surface of the header body, the second end configured for engagement with a printed circuit board.
11. (Original) The header connector of claim 1, wherein the plurality of shield blades are formed in a continuous strip of material.
12. (Original) The header connector of claim 11, wherein the continuous strip of material forming the plurality of shield blades further comprises at least one tail configured for engagement with a printed circuit board.
13. (Previously Presented) The header connector of claim 12, wherein the continuous strip comprises one tail for every two shield blades.
14. (Previously Presented) The header connector of claim 12, wherein the continuous strip comprises a plurality of tails spaced along the continuous strip of material forming the plurality of shield blades.
15. (Original) The header connector of claim 14, wherein the plurality of tails are electrically connected to a common ground.

16. (Original) The header connector of claim 1, wherein at least a portion of the plurality of shield blades are formed in a continuous strip of material.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.